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## Proposed Lower Fenestration U-Values require modification to Installation Procedures since current standards and practices cannot provide R-5 performance in the opening

We appreciate the cooperation with Energy Star and our participation in V6 compliance now used by nearly 100 manufacturers who license our WIXSYS program. It has served these licensees in meeting the NFRC FenStar requirements, and also providing the intended on-line installation instruction resource to consumers, dealers, contractors and the like.

More than 500,000 unique visitors and 8 million hits demonstrate the magnitude the response has been to the WIXSYS resource through our unique QR code approach as well as unique web pages for each of these manufacturers. On the product, on the web. It's worked well.

We read with interest (and experience) the Version 7 Draft goals of lowered target U-Values. We have always supported U-value goals that are designed to reduce the energy usage in buildings. But we also realize, and have proven in a series of laboratory testing here and in Germany with partners that can only happen if the fenestration products can be installed and deliver that performance in the home to match the performance in the lab. Our testing demonstrated that common standards and practices for installation will not achieve in-service performance equal to in-lab performance.

We have tested R5 windows at NCTL in York, PA and at MPA/BAU in Hannover, Germany. The tests compared replacement windows installed to ASTM- 2112-07 and traditional "Caulk 'n' Walk" methods. Both install protocols could not produce an in-service R-5 performance. The best we could achieve was about half. An R5 window only delivering an R2 in service.

Our tested conclusion is that R-5 pushes the envelope too far without commensurate changes and improvements in installation protocols. Why promise and charge a consumer for an R-5 window when placing the product in the opening, using today's skills to install, will only deliver an R-2. Put in an R-2 window and get a similar result.

To really effect an improvement in energy usage from fenestration, standards cannot be isolated to the products only. Such performance standards have entered an arena where it must be assured that the installation in the field are able to support the performance. We have lab tested and field tested methods that can accomplish that and we request that proper installation protocols, re-designed, be acknowledged as necessary to achieve your results.

AWDI, LLC

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